

66286-0002

said outer edges of the sidebars being recessed from the outer edges of the chip such that the frame is smaller than a corresponding dimension of the chip, so as to avoid formation of a fillet of chip attach material proximate to the outer edges of the chip when the chip is attached to the frame.

12. (Amended) A lead frame for connecting and supporting an integrated circuit chip having an outer chip edge, comprising a frame including interconnected side bars having a uniform width defining a central aperture and an outer frame edge, said frame edge being disposed within the outer chip edge, thus having no shoulder, and therefore minimizing fillet formation, and having a contact surface for securing the chip thereto.

IN THE SPECIFICATION:

Page 7 in the paragraph beginning with "FIG. 5"

FIG. 5 further illustrates an aperture traversing member 125. In this embodiment, this member serves to divide the aperture into two smaller apertures 126 and 127. Additional traversing members 125' (shown in dotted line) may be employed to further divide the apertures 126 and 127 into smaller areas.

IN THE DRAWINGS:

It is proposed to amend FIG. 5 by adding additional traversing bars 125' in dotted line.

REMARKS

This amendment is in response to the Office Action of August 27, 2002 in which the Examiner rejected claims 1-15 under 35 U.S.C. § 112. In particular the Examiner objected to the

term "a plurality of unitary sidebars" in claims 12-14. The amended claim 12 presented herein has been conformed to claim 1 and recites a plurality of having a uniform width. This feature has been discussed and explained in earlier correspondence and is believed to overcome the Examiner's rejection.

According to the Examiner claim 1 recites chip support zone for the frame having defined dimensions. The Examiner asserts that it is unclear whether the chips support zone has defined dimensions or if the frame has defined dimensions. The claim has been amended to delete the term "for the frame" to make it clear that the chip support zone has defined dimensions.

It is believed that the claim now more clearly defines the invention.

The word "than" has been inserted in line 16, after "is" to clarify the grammar.

The Examiner's rejection of claims 12-14 and 16 is respectfully traversed. Yoo does not describe a lead frame having unitary sidebars defining a central aperture and wherein the outer frame edges are disposed within the outer chip edge so that there is no shoulder and so that fillet formation is minimized. The arguments presented in the earlier Office Action are believed to be equally applicable to amended claim 12. The amendment was discussed during a telephone interview conducted November 27, 2002. The Examiner indicated that she believed the claim to be allowable as amended, and such a determination is earnestly solicited.

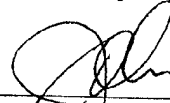
The specification has been amended to recite the additional traversing members which may be employed in the frame shown in Fig. 5. Likewise the drawings have been amended to illustrate the traversing members as well. No new matter has been presented in as much as the original claims recite the feature.

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In view of the foregoing it is respectfully requested that the Examiner reconsider her rejection of the claims, the allowance of which is earnestly solicited.

If this amendment necessitates the payment of additional fees or requires an extension, the Commissioner is authorized to charge deposit account 04-2223 for such fees.

Respectfully Submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. (Amended) ^{Am} A lead frame, for an integrated circuit chip having a frame engaging bottom surface for attachment ¹¹² to the frame by means of a chip attach material, said chip being formed with outer edges having defined dimensions, said frame comprising:

a unitary ¹¹² apertured frame having a central through aperture therein including a plurality of uniform sidebars each having an upper chip-supporting surface for engaging the bottom of the ¹¹² surface of the chip with the chip attach material therebetween,

each of said sidebars having an inner edge and an outer edge, said inner edges defining the central aperture,

said inner and outer edges being uniformly spaced apart defining therebetween a chip-support zone [for the frame] having defined dimensions,

¹¹² said outer edges of the sidebars being recessed from the outer edges of the chip such that the frame is smaller than a corresponding dimension of the chip, so as to avoid formation of a fillet of chip attach material proximate to the outer edges of the chip when the chip is attached to the frame.

12. (Amended) A lead frame for connecting and supporting an integrated circuit chip having an outer chip edge, ¹¹² comprising a frame including interconnected [unitary] side bars having a uniform width defining a central aperture and an outer frame edge, said frame edge being disposed within the outer chip edge, thus having no shoulder, and therefore minimizing fillet formation, and having a contact surface for securing the chip thereto.

Page 7 in the paragraph beginning with "FIG. 5"

FIG. 5 further illustrates an aperture traversing member 125. In this embodiment, this member serves to divide the aperture into two smaller apertures 126 and 127. Additional traversing members 125' (shown in dotted line) may be employed to further divide the apertures 126 and 127 into smaller areas.

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. (Amended) A lead frame, for an integrated circuit chip having a frame engaging bottom surface for attachment to the frame by means of a chip attach material, said chip being formed with outer edges having defined dimensions, said frame comprising:

a unitary apertured frame having a central through aperture therein including a plurality of uniform sidebars each having an upper chip-supporting surface for engaging the bottom of the surface of the chip with the chip attach material therebetween,

each of said sidebars having an inner edge and an outer edge, said inner edges defining the central aperture,

said inner and outer edges being uniformly spaced apart defining therebetween a chip-support zone [for the frame] having defined dimensions,

said outer edges of the sidebars being recessed from the outer edges of the chip such that the frame is smaller than a corresponding dimension of the chip, so as to avoid formation of a fillet of chip attach material proximate to the outer edges of the chip when the chip is attached to the frame.

12. (Amended) A lead frame for connecting and supporting an integrated circuit chip having an outer chip edge, comprising a frame including interconnected [unitary] side bars having a uniform width defining a central aperture and an outer frame edge, said frame edge being disposed within the outer chip edge, thus having no shoulder, and therefore minimizing fillet formation, and having a contact surface for securing the chip thereto.

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